



Question Paper For Internal Assessment Examination (Theory) - Credit 3 / 72 / SET 1

**NAME OF STUDY CENTER: SCHOOL OF AERONAUTICS, NEEMRANA**

**Instructions for Students / Faculty**

**Mid Term I (Total 60 Marks, 2 HRS. Syllabus from Unit-1)**

- Part A: Total number of questions to be given are six (3 from CO1 and 3 from CO2), each carrying 2 marks and are compulsory to attend. There is no choice. They are short answer type questions (**Not More Than 25 Words for Both Question & Answer**), no objective type or fill in the blanks. Total 12 marks.
- Part B: Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student has to answer four (2 from CO1 and 2 from CO2). They are long answer type (**Not More Than 50 Words for Question**), each carrying 4 marks. Total 16 marks.
- Part C: Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student has to answer four (2 from CO1 and 2 from CO2). They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question**)\*, each carrying 8 marks. Total 32 marks.

**Mid Term II (Total 90 Marks, 2.5 HRS., Syllabus from Unit-2)**

- Part A: Total number of questions to be given are ten (5 from CO3 and 5 from CO4), each carrying 3 marks and are compulsory to attend. There is no choice. They are short answer type questions (**Not More Than 25 Words for Both Question & Answer**), no objective type or fill in the blanks. Total 30 marks
- Part B: Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student has to answer four (2 from CO3 and 2 from CO4). They are long answer type (**Not More Than 50 Words for Question**), each carrying 6 marks. Total 24 marks.
- Part C: Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student has to answer any four (2 from CO3 and 2 from CO4). They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question**)\*, each carrying 9 marks. Total 36 marks.

**Mid Term III (Total 90 Marks, 2.5 HRS., Syllabus from Unit-3)**

- Part A: Total number of questions to be given are ten (5 from CO5 and 5 from CO6), each carrying 3 marks and are compulsory to attend. There is no choice. They are short answer type questions (**Not More Than 25 Words for Both Question & Answer**), no objective type or fill in the blanks. Total 30 marks
- Part B: Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student has to answer four (2 from CO5 and 2 from CO6). They are long answer type (**Not More Than 50 Words for Question**), each carrying 6 marks. Total 24 marks.
- Part C: Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student has to answer four (2 from CO5 and 2 from CO6). They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question**)\*, each carrying 9 marks. Total 36 marks.

\* **LIST OF ELABORATIVE THEORY QUESTION SUBJECTS:** 3 MH4 - 07 Manufacturing Process, 4 AN4 - 06 Aircraft Materials and Processes (Cr 3), 5 AN4 - 05 Aircraft System (Cr 3), 6 AN4 - 05 Avionics-I (Cr 3), 6 MH4 - 03 Applied Hydraulics & Pneumatics (Cr 3), 6 MH5 - 11 Principles of Management (Cr 3), 6 MH5 - 13 Aircraft Electronics System (Cr 3), 7 AN5 - 12 Maintenance of Airframe and System (Cr 3), 7 AN5 - 13 Helicopter Theory (Cr 3), 7 AG6 - 60.1 Human Engineering and Safety (Cr 3), 7 ST - 01 Avionics II (Special Theory Subject) (Cr 3), 7 MH5 - 11 Design of Mechatronics Systems (Cr 3), 7 MH5 - 12 Robotics and Machine Vision System (Cr 3), 7 MH6 - 13 Medical Electronics (Cr 3), 7 AN6 - 60.1 Aircraft Avionic System (Cr 3), 8 AN5 - 12 Maintenance of Power Plant and System



## Question Paper For Internal Assessment Examination (Theory) - Credit 3 / 72 / SET 1

**NAME OF STUDY CENTER: SCHOOL OF AERONAUTICS, NEEMRANA**

(Cr 3), 8 AN5 - 13 Unmanned Aerial Vehicles & Systems (UAV) (Cr 3), 8 MH5 - 13 Product Development & Launching  
(Cr 3), 8 EC6 - 60.2 Robotics and control (Cr 3)

**Instructions For Faculties**

There should be total 6 Course Outcomes (COs) for each subject.

- Mid Term Question Papers are to be submitted as per Course Outcomes (COs) which should be divided equally in Part A, Part B and Part C according to Mid Term Examination and Credit Point.
- In Mid Term-1, the questions are to be given from CO1 and CO2. In Mid Term-2, the questions are to be given from CO3 and CO4. Similarly, in Mid Term-3, the questions are to be given from CO5 and CO6.
- **FACULTY MEMBERS, PLEASE ENSURE EXCEPT ABOVE LISTED SUBJECTS, NO THEORITICAL ELABORATIVE QUESTION SHOULD BE GIVEN IN PART 'C' OF QUESTION PAPER**

**INSTRUCTION FOR STUDENTS**

- **STUDENT IS ALLOWED TO ENTER LATE NOT MORE THAN 15 MIN AFTER STARTING OF EXAM,**

**QUESTION PAPER & STUDENTS DETAILS**

Type of Exam	Mid Term 1	Date of Submission	16/02/2021
Name of Faculty	Ms. Varsha	Date of Examination	17/02/2021
Course	B.Tech Engineering) (Mechatronics	Semester	SEMESTER : 8
Batch	Third (3)	Subject	8 CE5 - 60.1 Composite Materials (Cr 3)

**COURSE OUTCOMES FOR REFERENCE TO FRAME QUESTION PAPERS**

(Faculties are required to mention Course Outcome Number against each part of the question paper)

Course Outcome	CO 1- Students shall learn composite material history, definition, grouping and its applications.  CO 2- Students shall gain knowledge about micromechanical properties (volume and mass fractions, density and void content) of composite lamina.		
Email I'd	varsha@soaneemrana.org	Phone No.	935-106-2262
Student Name		Student Reg No.	

**PART A**

All the questions are compulsory to attend.

1. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.

CO 1



Question Paper For Internal Assessment Examination (Theory) - Credit 3 / 72 / SET 1

**NAME OF STUDY CENTER: SCHOOL OF AERONAUTICS, NEEMRANA**

<b>Question : 1</b>	What do you mean by composite material?		
1	Introduction to composite material	Mechanics of composite material by B.D. Agrawal, Chapter1, Page no.1-5	
<b>Question : 2</b>	What are the applications of composite Materials?		
2	Introduction to composite Material	Mechanics of composite material by B.D. Agrawal, Chapter 2, Page no10-12	
<b>Question : 3</b>	What are the important properties require for good composite material?		
3	Properties of composite material	Mechanics of composite material by B.D. Agrawal, Chapter 2, Page no10-12	
<b>Question : 4</b>			
<b>Question : 5</b>			
<b>2. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.</b>			CO 2
<b>Question : 6</b>	What do you mean by matrix and give three example?		
4	Matrix	Mechanics of composite material by B.D. Agrawal, Chapter1, Page no.1-5	
<b>Question : 7</b>	What are the different Fabrication process?		
5	Fabrication process	Mechanics of composite material by B.D.Agrawal	
<b>Question : 8</b>	Classify the types of fibers with example?		
2	Fibers	Mechanics of Composite Material by B.D.Agrawal	
<b>Question : 9</b>			
<b>Question : 10</b>			



## Question Paper For Internal Assessment Examination (Theory) - Credit 3 / 72 / SET 1

**NAME OF STUDY CENTER: SCHOOL OF AERONAUTICS, NEEMRANA****PART B**

**FOR MIDTERM 1 - Part B:** Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student must answer four (2 from CO1 and 2 from CO2).

**FOR MIDTERM 2 - Part B:** Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student must answer four (2 from CO3 and 2 from CO4).

**FOR MIDTERM 3 - Part B:** Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student has to answer four (2 from CO5 and 2 from CO6).

**3. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.**

CO 1

**Question : 1**

Compare the properties of polymer like epoxy, polyester and phenolic?

6

Polymers and its properties

Mechanics of  
composite Material by  
B.D. Agrawal, Chapter  
2, Page 30-39**Question : 2**

What are the important properties require for the matrix to obtain strong composite material?

7

Properties of matrices

Mechanics of  
composite Material by  
B.D. Agrawal, Chapter  
2, Page 30-34**Question : 3**

Discuss the properties of fibres and important factor which affect the strength of composite material?

6

Properties of fibres

Source: : Mechanics of  
composite Material by  
B.D. Agrawal, Chapter  
2, Page 16-28**4. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.**

CO 2

**Question : 4**Explain the manufacturing process,  
a) Hand lay up techniques

3

Hand lay up technique

Mechanics of  
Composite Material by  
B.D.Agrawal**Question : 5**Explain the manufacturing process,  
a) Spray Lay up technique

4

Spray Lay up technique

Mechanics of  
Composite Material by  
B.D.Agrawal**Question : 6**Explain the manufacturing process,  
a) Pultrusion process



## Question Paper For Internal Assessment Examination (Theory) - Credit 3 / 72 / SET 1

**NAME OF STUDY CENTER: SCHOOL OF AERONAUTICS, NEEMRANA**

6	Pultrusion process	Mechanics of Composite Material by B.D.Agrawal	
<b>Question : 7 (Old Pattern)</b>			

**PART C**

**FOR MIDTERM 1 - Part C:** Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student must answer four (2 from CO1 and 2 from CO2).

**FOR MIDTERM 2 - Part C:** Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student must answer four (2 from CO3 and 2 from CO4).

**FOR MIDTERM 3 - Part C:** Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student has to answer four (2 from CO5 and 2 from CO6).

**5. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.** CO 1

**Question : 1** Explain the fabrication process of ceramic matrix and its properties with diagram?

5	Ceramic Matrix	Source: Mechanics of composite Material by B.D. Agrawal, Chapter 2, Page 50-57	
---	----------------	--	--

**Question : 2** Explain the fabrication process of Metal Matrix and its properties with Diagram?

4	Metal Matrix	Mechanics of composite Material by B.D. Agrawal, Chapter 2, Page 40-46	
---	--------------	--	--

**Question : 3** What are the application of Composite Material for aircraft?

7	Application of Composite Material	Mechanics of Composite Material by B.D.Agrawal	
---	-----------------------------------	--	--

**6. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.** CO 2

**Question : 4** Explain the manufacturing process for glass and discuss types of glass fibers?

3	Glass fibers	Mechanics of Composite Material by B.D.Agrawal	
---	--------------	--	--

**Question : 5** Explain the manufacturing process for Carbo fibers?

4	Carbon fibers	Mechanics of Composite Material by B.D.Agrawal	
---	---------------	--	--



Question Paper For Internal Assessment Examination (Theory) - Credit 3 / 72 / SET 1

**NAME OF STUDY CENTER: SCHOOL OF AERONAUTICS, NEEMRANA**

Question : 6

Explain the manufacturing process for Polymer Matrix?

8

Polymer Matrix

Mechanics of  
Composite Material  
by B.D.Agrawal

**Upload Scanned Document In Case of Numerical or Diagram For Any of The Above Questions. (Mention question number with relevant fig / numerical / equations. Max 150 KB)**

**I have scrutinized the question paper. There is no spelling mistake or any type of irrelevant question.**

**Corporate Office: H 974, Palam Extension, Part: 1, Sector: 7, Dwarka, New Delhi**